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G.m.b.H., Mühlheim, May 25, 1992; Witteman and Küppers Reprowerkstätten G.m.b.H., Frankfurt, May 26, 1992; Eder Repros Offset-Repro G.m.b.H., Stuttgart, May 27, 1992) before visiting MAN-Roland's facilities in Offenbach, Germany.

4. After Harry Bowyer, Gary Doughty and I arrived at MAN-Roland's Offenbach facilities on the afternoon of May 27, 1992, we met Helmuth Pleier and Wolfgang Schweißer, and they showed us through MAN-Roland's showroom, in which a large number of MAN-Roland presses were displayed. One of these presses was a MAN-Roland six color 40 inch press, which we were told was a Roland 700 series prototype. Since this was a six color press, it was also referred to as a Roland 706. The MAN-Roland personnel described the various features of the prototype press, including its speed of a maximum of fifteen thousand sheets per hour. This Roland 700 series press had two end-of-press tower coaters, the one at the end being equipped with an anilox roller. I was aware that the Roland 700 series was first started in about 1990, but, to the best of my knowledge, prior to this time no Roland 700 series had ever had a tower coater with an anilox roller. It was my understanding at that time that anilox rollers were typically employed in flexographic work, and this was the first time I had seen an anilox roller on an offset lithographic press.

5. One of the purposes of the trip to MAN-Roland was for WPC and Wolstenholme to convince MAN-Roland to utilize our WIMS technology, which is now embodied in the '976 patent. At the time of the trip in May 1992, I was considering various possibilities to try to get a larger volume of metallic ink and larger metallic ink particles deposited on the substrate when printing with WIMS. In the showroom, MAN-Roland's personnel showed me several press test sheets of various labels and cartons that had been printed with metallic inks, silver and gold, on the prototype MAN-Roland 700 series six color press with the anilox roller in the tower coater. We were told that the metallic silver and gold inks were applied using the flexographic process with the end-of-press tower coater utilizing flexographic print plates after the sheets had been printed with the lithographic process. I was also told that this press would be introduced at the forthcoming IPEX (International Printing Exposition) that was to take place in England in September 1993.

6. We were then escorted into and shown MAN-Roland's training room. This room contained a number of presses, and we were told these presses were disassembled and reassembled to train MAN-Roland's employees and other printing mechanics and installers. In one corner of the training room was a glass enclosed room containing what I recall was a gravure

printing unit, which was also being used for testing purposes. I knew at that time in May 1992 that gravure printing was a specialized process involving a gravure cylinder in which larger volumes of inks could be applied to a substrate. After having seen the end-of-press tower coater with an anilox roller on the prototype MAN-Roland 706 press and the gravure test unit, it occurred to me that my goal of improving the WIMS process by increasing the volume and size of metallic particles used in the process could be obtained by using a tower coater with an anilox roller or a gravure unit up front or as the first station on a lithographic press with the appropriate interstation drying. I disclosed this idea to Gary Doughty, and we discussed keeping it confidential and not disclosing it to the MAN-Roland personnel because we did not know them that well.

7. As the discussions with MAN-Roland's personnel continued, I felt much more comfortable talking to them, especially after recalling that WPC had just filed a patent application on WIMS. Accordingly, in my conversations with Helmuth Pleier and Wolfgang Schweißer, I disclosed my idea to them by asking if the tower coater with an anilox roller could be moved "up front" on the press. In response, Mr. Pleier said that it was possible. We continued our conversation about the feasibility of my ideas with MAN-Roland personnel in a dinner meeting later that evening with Mr. Pleier.

8. Upon my return to the United States, I spoke with Bill Davis and told him of my discovery and initial idea of possible options to improve the WIMS process by using an in-line process with a flexographic unit "up front". The options for an "up front" unit included a dedicated station, a bolt on device like a "T"-Head, or even perhaps a rail traversing the press from which an anilox roller coating assembly could be lowered to any lithographic station, or perhaps even a flexographic station moving sideways into any desired lithographic stations. Bill said that the easiest way to perform the process, in his opinion, was to utilize a modification of a conventional "rack-back", such as made by Dahlgren, Epic, Rapidac or Oxy-Dry, which would be modified for interstation use and equipped with an anilox roller and chambered doctor. Bill indicated to me that my concept of a system traversing over the length of the press with the anilox roller assembly being retractable vertically, while theoretically possible, had special limitations as to WPC only because of ceiling height, and was, therefore, impractical as to WPC. Bill told me that the changeover time with a "T"-Head type was lengthy and that, while it was technically possible, a modified "T"-Head type was not commercially feasible. We decided to

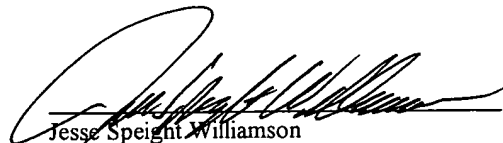
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go with Bill's recommendation for a modified rack-back device, and we made several sketches on yellow sheets of how a "rack-back" device could be built for interstation use.

9. Following the MAN-Roland trip, Wolstenholme made substantial efforts, starting in the fall of 1992, to try again to motivate MAN-Roland to use the WIMS technology as a part of its efforts to sell the new Roland 700 at IPEX in England in September 1993. I met with Harry Bowyer with Bill Davis in Dallas on October 18-20, 1992 (See Exhibit A), and again discussed with him what we had to do to convince MAN-Roland to at least try WIMS. Harry Bowyer went back to Offenbach, Germany to visit MAN-Roland in late February 1993, in the week of February 22, 1993 (See Exhibit B), and to the best of my knowledge, tried to motivate MAN-Roland to use WIMS. That effort continued into March 1993. (See Exhibit C, D).

10. I believe that the lacquering press of Figs. 1-2 and the bulk of the '752 patent up to Col. 5, line 55 is nothing other than the Roland 700 prototype I saw in Germany on May 27, 1992. MAN-Roland, to the best of knowledge, first introduced the Roland 700 with a tower coater using an anilox roller to the press in February 1993 (German article in Flexodruck 2-93 at 42-43 and translation, Exhibit E), and very soon thereafter filed a patent application in Germany. To the best of my knowledge, the Roland 700 having an end-of-press tower coater with an anilox roller was first introduced at IPEX in September 1993. The unit displayed did not have a tower coater with an anilox roller - dedicated or otherwise - "up front", but again, only end-of-press. To the best of my knowledge, MAN-Roland has never advertised or sold commercially a lithographic press with such an up front tower coater/flexographic printer.

The undersigned Declarant stated further that all statements made herein of Declarant's own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

  
Jesse Speight Williamson

Date: 9/22/2000

# MEMORANDUM

To: Jerry Williamson      Sherm Sweeney      From: Jesse Williamson  
Eob Emrick      Gary Doughty  
Ray Adams      Brad Palmer      Date: Oct. 13, 1992  
Bill Davis

Subject: WOLSTENHOLME BRONZE POWDERS LIMITED

Harry Bowyer is scheduled to be in town on Sunday, October 18, 1992.

We were supposed to have testing for him on the 19th and 20th.

have gotten with Gary and made sure we have images and we will need to get with our ink company in regards to the powdered inks they sent in. I think we have enough to use that they sent, but they will probably bring some with them as well. This is an excellent chance for us to get our WIMS book going and show them what we can do. I believe that we have all been procrastinating on getting the ball rolling on this, but now time is of the essence.

I will be getting back with each one of you after we get the images ready to separate.

Thank you,

Jesse Williamson  
JW:rkb

MEMORANDUM

To: Harry Bowyer (Fax)  
Jesse Williamson  
Gary Doughty

From: Don Raumaker

Date: 2-16-93

Subject: Conference Report

MEETING DATES: February 8 and 9, 1993 - Dallas, Texas

1. WIMS Brochure

It was agreed dummy/concept may be altered somewhat, to reduce cost, by eliminating some images/pages, for coordination with overall effort.

2. IPEX - Birmingham, England

A 10-day show in September 1993 for which Bowyer will provide specifics as to needs, dates, hours, accommodations, et. al. when available that WPC factors may plan, provide and attend accordingly.

3. MAN Roland

- a. Wolstenholme International negotiating with subject for no less than 2-days on 6/color press and 2-days on 2/color press with more days if WIMS posters deemed worthy of such by exhibitor(s).
- b. Bowyer meeting with Phillipe and Haldinger in Frankfurt, Germany week of February 22 to present concepts for posters.

4. Posters

- a. Acevedo presented pencils of 6/color and 2/color concepts on "Cowboy" theme for Bowyer's presentation to Roland. Production notes/credits will be created once final versions, specifications, suppliers, manufacturing requirements, etc. all resolve.
- b. Bowyer saw presentation by photographer Skeeter Hagler with rep K.J. Hill and took samples, brochures, et. al. for presentation to Roland factors.
- c. K.J. having 3-projector/desolve 35MM slides with audio track presentation converted to Beta video-cassette master for Bowyer's use with Roland factors.
- d. Raumaker faxing Skeeter's bio to Bowyer's office for presentation to Roland factors.

5. Tentative Schedule

a. By February 26

Bowyer will communicate Roland's response to WPC that other participation possibilities such as Kodak and Crossfield may be contacted by WPC and Zanders (paper) by Wolstenholme.

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Conference Report  
Page Two

b. By March 15

- (1) WPC will have estimated costs for design, photography, artwork, separations and proofing from specs...to accommodate Roland equipment...and finalized all decisions for WIMS brochure.
- (2) Raumaker will have transmitted 35MM color slide of WPC's new web press up and running to Bowyer.
- (3) All particulars attendant to accommodating Roland at IPEX will have been fixed.

c. By May 3

- (1) Posters, separations and proofing to Roland.
- (2) WIMS brochure art press-ready for WPC.
- (3) Publicity plan (if any) completed and agreed upon.

d. By June 1

- (1) Roland will have completed and packed pre-printing of posters.
- (2) WIMS brochure completed.

6. Miscellaneous

- a. "Cowboy" thematic approach could be adapted to other materials, exhibitions, et. al., including a 1994 calendar were Zanders to deem worthy of such investment.
- b. Bowyer will advise what role, if any, Skeeter's photography, et. al., shall play in total IPEX effort, and/or thereafter.
- c. Bowyer will be returning to Dallas in Spring, concerning finalization of all activities and components, when any outstanding decisions, agreements, etc., must resolve.

Thank you,

Don Raumaker

DR:db

cc: Jerry Williamson  
Sherm Sweeney  
Luis Acevedo (fax)  
Don Sibley (fax)

00150-964500

MEMORANDUM

To: Harry Bowyer  
~~Joanne Williamson~~  
~~Gary Doughty~~

From: Don Rader

Date: Mar. 9, 1991

Subject: WIMS TRIAD CONFERENCE REPORT

Met this date and indicated following action items:

I. Selected Skeeter Hagler and a few others to meet last in April.

A. Series

Color all of the 1000 copies to be sent from K.C. for conversion to B.W.

2. B.A. will copy editor going to Lila from K.C.

3. 3/9 print of Tom R. (K.C.) will come to Lila from K.C.

B. Costs

2. General copy materials to be sent to Lila

3. Lila to get materials, at a price to be set by Don

II. Deadline: 1000 copies of the 1000 copies to be sent for or before March 26 for conversion to B.W.

III. Sheet of the 1000 copies to be sent to Lila

IV. Costs - very cheap

Quantities of 1000 copies of the 1000 copies to be sent for or before March 26 for conversion to B.W. return dates for over-printing with credits and WIMS copy for possible downline marketing applications.

cc: Kathy Jane Hill  
Lila Acevedo



# WOLSTENHOLME INTERNATIONAL

INTERNATIONAL



OUR REF:

HEB/JB

DATE:

18 March 1993

SPRINGFIELD HOUSE,  
P.O. BOX 14, DARWEN,  
LANCASHIRE BB3 0RX  
ENGLAND.**FACSIMILE TRANSMISSION**TEL: (0254) 760099  
TELEX: 63251 WOLBRO G  
FAX: (0254) 873009

TO:

JESSIE WILLIAMSON

ATTN:

C.C DON RAUMAKER/GARY DOUGHTY

FROM:

HARRY BOWYER

NO. OF PAGES INCLUDING FRONT SHEET: 1

**ROLANDS TEST PRINT ON TWO COLOUR PRESSES AT GRAPHIC CENTRE**

As discussed they require the plain positives for the printing on 22-25th March.

They will then print during w/c 29 March.

The machine size is 50 x 70 cm.

What is the colour sequence?

Also what is the tack sequence, if any?

Regards

HARRY BOWYER

TRANSLATION

FlexoDruck 2-93, 42-43

World premiere in Dortmund: Gold lacquer printing takes the place of metal bronzing

When the editorial board of FlexoDruck received an invitation to the Fritz Busche Druckerei-GmbH to Dortmund, the first thought was: What are we supposed to do at an offset printing plant? After a first telephone conversation with GERD RICHTER at Du Pont and a couple of background information items it was soon clear: Here a world premiere is to be seen which opens up interesting possibilities also for Flexodruck. There was to be seen a completely new (offset) printing process: Offset gold ink (-farbe) on the basis of aqueous binder applications in a lacquering tower converted into the Flexoprinting mechanism of a sheet offset machine.

The (offset) technical press was invited on January 28 to a presentation to Dortmund and was able to experience the new development in production as well as pose questions to those participating in the project.

Dr. ANDREAS ALTMAYER, spokesman of the business management of the Busche enterprise group explained the enterprise philosophy with

the words: "we are not speaking about ourselves, but we are talking with you. Dialogue is the precondition for the finding of the best solution for an assignment under creative, economic and ecological aspects." He designated KALUS RIETZLER the director of the development division "process technology" as the father of this development. It is to his suggestion that the first considerations go back, the thought, namely, of replacing the conventional laborious and costly bronzing in offset printing by an inline production comparable in effect. (The best results in gold and silver effects, for example on packages or labels were hitherto obtained with the complicated and expensive imprint foil printing, by intaglio printing, in which by use of low-viscosity printing inks the applying of relatively thick color layers is possible or by the likewise technically complicated bronzing process, and which is moreover environment-unfriendly because of the metal pigment dust used.)

In further reports, WERNER RINGEL as plant director spoke about his practical experiences, especially in dealing with another application technology--Flexo--as well as dealing with an application medium still relatively foreign to the offset printer--the Flexo printing plate. MARTIN LANGE, a board member at MAN-Roland for marketing and service give technical details about the printing machine (a five-color Roland 700 with two lacquering towers in 3b format) and carefully avoided designating the "modified" lacquering tower as a Flexo printing mechanism. ("Contact anxieties" with

another printing process?

Surprisingly, one does count among the well-known offerers of newspaper flexomachines--principally in the USA.)

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Astonishing that Du Pont as producer of the Cyrel CL2-M-flexo-printing plate for lacquer application did not open his mouth. Details on the platten type were yielded then in personal conversation with GERD RICHTER and the technical advisor Wilfried Kraft who also looked after the user in its development. Here, the technical data:

CL2-M plate with a PQ surface and a-modified polymer layer, total thickness 0.63 mm on 0.22 mm thick carrier foil, hardness 80-85° Shore A. As substructure , after some tests, decision was made for a full-surface exposed Cyrel PLS plate, 2.54 mm total thickness, hardness 52-54° Shore A. Plate and substructure provide the requisite total thickness of 3.25 mm. Hitherto they had not decided at Busche for a lacquer plate production of their own but had depended rather on the know-how of the specialists at Rudolf Reproflex in Goslar. As is proper for an offset printer, the plates are stretched (also cementing was tried). Here there are still some problems with the "correct" tensioning and a stiffer carrier is desired in order to minimize the minimum

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Great areas of application could be, for example, packages and the label sector which already today are frequently improved with other processes (for example hot-embossing foils). Astonishingly (he said) from the corner of the flexoprinting no demand on the Team has yet been made, so that the development work for this

ink arose on insistence of an offset printer. Now then,  
now flexoprinting can profit from another printing process.

The ink

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In the following section there is reproduced the report of  
ANDREA HEINEMANN with the most important passages and statements for  
the technical details of the new Acrylac Gold and Silver Inks.

Today there are various possibilities for achieving promotionally  
useful metal effects:

--Use of metallized printing materials and laser-functioning  
printing inks (mainly in the case of bottle labels),

- Bronzing,

- Embossing foil printing,

- Intaglio printing (Tiefdruck).

Each of these processes presents corresponding disadvantages  
(see Table 1). With the "new" ink there should be linked as few  
as possible disadvantages, for example additional installations,  
costs, burdens on the environment) with the best possible advantages  
(highest metal effect and economy).

| Processes                     | Disadvantages                                                                                 |
|-------------------------------|-----------------------------------------------------------------------------------------------|
| Metallized printing materials | High printing material costs                                                                  |
| Bronzing                      | Bronzing installation<br>Fouling<br>Dust-removal problems<br>Several passages through machine |
| Embossing foil printing       | Foil embossing installation<br>Recycling<br>Several passages through machine                  |
| Intaglio printing             | Intaglio printing installation<br>Solvent disposal<br>Balancing (Auslastung)                  |

Table 1

In regard to the parameter metal effect it must be said that two different process are used for the production of aluminum or brass pigments: High-vacuum processes (very expensive and costly, but clearly better metal effect) or grinding.

Through the production process there arises a scattering of the particle size, which again has a decisive influence on the covering capacity and the print-out behavior of the ink: with increasing particle size there are diminished the covering power (but the brilliancy increases) and the print-out behavior (edge sharpness).

The selection of suitable particle sizes can bring about decisive differences in quality.

Besides the influence of the metal pigments, further criteria are decisive for the brilliance of a gold color (or ink) (see Table 2). Aqueous binders make possible a better depositing behavior: the pigmen.... [TEXT BREAKS OFF]

ILLUSTRATION, bottom of page 43

Microphotograph of a gold color (or ink):

Bronzing (left),  
Acrylac Gold (middle),  
Offset gold (right).

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## Weltpremiere in Dortmund: Goldlackdruck löst Metall-Bronzierung ab

Als die Redaktion von *Flexo-Druck* eine Einladung zur Fritz Busche Druckereigesellschaft mbH nach Dortmund bekam war der erste Gedanke: was sollen wir bei einer Offsetdruckerei? Nach einem ersten Telefonat mit GERD RICHTER bei Du Pont und ein paar Hintergrundinformationen war schnell klar: hier wird eine Weltpremiere zu sehen sein, die auch dem Flexodruck interessante Möglichkeiten eröffnet. Zu sehen war ein völlig neues (Offset-)Druckverfahren: *Offset-goldfärbefarbe auf der Grundlage wässriger Bindemittel – aufgetragen in einem zum Flexodruckwerk umgebauten Lackierturm einer Bogenoffsetmaschine.*

Die (Offset-)Fachpresse war am 29. Januar zu einer Vorführung nach Dortmund eingeladen und konnte die Neuentwicklung in Produktion miterleben sowie den projektbeteiligten Fragen stellen.

Dr. ANDREAS ALTMEYER, Sprecher der Geschäftsführung der Busche Unternehmensgruppe, erklärte die Unternehmensphilosophie mit den Worten: "Wir reden nicht über uns, sondern sprechen mit Ihnen. Dialog ist die Voraussetzung zur Findung der besten Lösung für einen Auftrag unter kreativen, wirtschaftlichen und ökologischen Aspekten." Er bezeichnete KLAUS RIETZLER, den Leiter der Entwicklungsabteilung "Verfahrenstechnologie" als Vater dieser Entwicklung. Auf dessen Anregung gehen die ersten Überlegungen zurück, das herkömmliche arbeits- und kostenintensive Bronzieren im Offset durch eine im Effekt vergleichbare Inline-Fertigung zu ersetzen. (Beste Ergebnisse bei Gold- und Silbereffekten z.B. auf Verpackungen oder Etiketten erhielt man bis dahin mit dem aufwendigen und kostenintensiven Prägefolien-

druck, durch den Tiefdruck, bei dem durch Verwendung niedrigviskoser Druckfarben das Auftragen relativ dicker Farbschichten möglich ist oder durch das ebenfalls technisch aufwendige und zudem durch den eingesetzten Metallpigmentstaub umweltbelastende Bronzieren.)

In weiteren Referaten sprach WERNER RINGEL als Betriebsleiter über seine praktischen Erfahrungen, besonders im Umgang mit einer anderen Auftragstechnologie – Flexo – sowie dem Umgang mit einem dem Offsetdrucker noch relativ fremden Auftragsmedium – der Flexodruckplatte. MARTIN LANGE, bei MAN-Roland Vorstandsmitglied für Vertrieb und Service gab technische Details über die Druckmaschine (eine Fünffarben-Roland 700 mit zwei Lacktürmen im 3b-Format) und vermied es sorgsam, den "modifizierten" Lackturm als Flexodruckwerk zu bezeichnen. ("Berührungsängste" mit einem anderen Druckverfahren? Verwunderlich, zählt man doch zu den namhaften Anbietern von Zeitungsflexomaschinen – vornehmlich in den USA.)

Erstaunlich, daß Du Pont als Hersteller der eingesetzten Cyrel CL2-M-Flexodruckplatte für Lackauftrag nicht zu Wort kam. Einzelheiten zum Plattentyp er-

gaben sich dann im persönlichen Gespräch mit GERD RICHTER und dem technischen Berater Wilfried Kraft, der auch den Anwender bei seiner Entwicklung betreute. Hier die technischen Daten:

CL2-M-Platte mit einer PQ-Oberfläche und einer modifizierten Polymerschicht, Gesamtstärke 0,63 mm auf 0,22 mm starker Trägerfolie, Härte 80-85° Shore A. Als Unterbau entschied man sich nach etlichen Versuchen für eine vollflächig belichtete Cyrel PLS-Platte, 2,54 mm Gesamtstärke, Härte 52-54° Shore A.



Platte und Unterbau erbringen die erforderliche Totalstärke von 3,25 mm. Bisher entschied man sich bei Busche noch nicht für

Pressekonferenz in Dortmund.

Von links nach rechts: Werner Ringel (Busche), Martin Lange (MAN Roland), Gerd Mackensen (verdeckt) und Dr. Andreas Altmeyer (beide Busche), Andrea Heineemann und Harald Weberbauer (beide Michael Huber, München).



Angeregte Diskussion nach der Betriebsbesichtigung.

eine haus eigene Lackplattenherstellung sondern verläßt sich vielmehr auf das Know-how der Fachleute bei *Rudolf Reproflex* in Goslar. Wie es sich für einen Offsetdrucker gehört, werden die Platten gespannt (man hat auch das Kleben versucht). Hier hat man noch etwas Probleme mit dem "korrekten" Spannen und wünscht sich einen steiferen Träger, um Passerungenauigkeiten durch Verzug beim Spannen zu minimieren.

### Was hat der Flexodruck davon?

Nach Auskunft von Dipl.-Ing. ANDREA HEINEMANN vom Farberhersteller *Michael Huber München GmbH* wurden natürlich Versuche auch auf der haus eigenen Flexodruckmaschine in Celle gemacht. Die Ergebnisse lassen die klare Aussage zu, daß diese neue Farbe auf jeder normalen Flexodruckmaschine zu verdrucken sei. Der Drucker müsse sich natürlich an eine höhere Viskosität gewöhnen, die aber deutlich unter der "Zähflüssigkeit" einer UV-Farbe liege.

### Die Farbe

Im folgenden Abschnitt wird das Referat von ANDREA HEINEMANN mit den wichtigsten Passagen und Aussagen zu technischen Details der neuen *Acrylac Gold- und Silberfarben* wiedergegeben.

Heute gibt es verschiedene Möglichkeiten werbewirksame Metalleffekte zu erzielen:

- Einsatz metallisierter Bedruckstoffe und lasierende Druckfarben (hauptsächlich bei Flaschen-Etiketten),
- Bronzierung,
- Prägefoliendruck,
- Tiefdruck.

Jedes dieser Verfahren weist entsprechende Nachteile auf (siehe *Tabelle 1*). Bei der "neuen" Farbe sollte möglichst wenig

Zum modifizierten Lackturm mit seinem Auftragsystem bleibt anzumerken: Während der Präsentation wurde noch im "quasi Quetschbetrieb" gearbeitet; die Farbe läuft aus dem Farbkasten zwischen eine "Verreiber"- und eine Auftragswalze. Die Endversion wird eine Rasterwalze und ein Kammerrakelsystem umfassen, das aus Zeitgründen noch nicht installiert war. Somit ist dieser Teil ein echtes Flexodruckwerk!

Große Anwendungsbereiche könnten z.B. Verpackungen und der Etikettensektor sein, die schon heute häufig mit anderen Verfahren veredeln (z.B. Heißprägefolien). Erstaunlicherweise sei aus der Ecke des Flexodrucks noch keine Anforderung an das Team herangetragen worden, so daß die Entwicklungsarbeit zu dieser neuen Farbe auf Drängen eines Offsetdruckers entstand. Nun denn, jetzt kann der Flexodruck von einem anderen Druckverfahren profitieren.

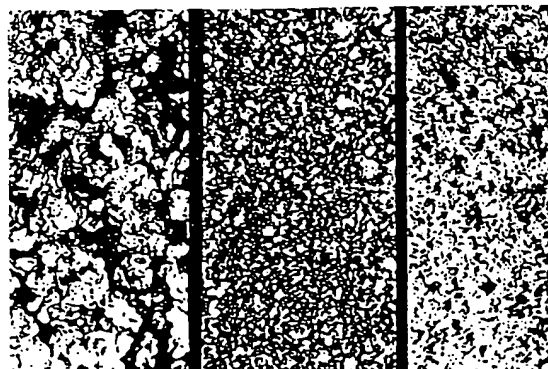
Nachteile z.B. zusätzliche Anlagen, Kosten, Umweltbelastungen mit den bestmöglichen Vorteilen (höchster Metalleffekt und Wirtschaftlichkeit) verknüpft werden.

| Verfahren                   | Nachteile                                                                         |
|-----------------------------|-----------------------------------------------------------------------------------|
| Metallisierte Bedruckstoffe | hohe Bedruckstoffkosten                                                           |
| Bronzierung                 | Bronzieranlage<br>Verschmutzung<br>Abstaubprobleme<br>mehrere Maschinendurchgänge |
| Prägefoliendruck            | Folienpräganlage<br>Recycling<br>mehrere Maschinendurchgänge                      |
| Tiefdruck                   | Tiefdruckanlage<br>Lösemittelentsorgung<br>Austattung                             |

Zum Parameter Metalleffekt muß gesagt werden, daß zwei unterschiedliche Verfahren zur Herstellung der Aluminium- oder Messing-Pigmente eingesetzt werden: *Hochvakuumverfahren* (sehr aufwendig und teuer, aber deutlich besserer Metalleffekt) oder *Mahlen*. Durch die Herstellung bedingt, entsteht eine Streuung der Teilgröße, die wieder einen entscheidenden Einfluß auf die Deckfähigkeit und das Ausdrückverhalten der Farbe hat: mit zunehmender Teilchengröße verringern sich Deckkraft (aber die Brillanz nimmt zu) und das Ausdrückverhalten (Randschärfe). Die Auswahl geeigneter Teilchengrößen kann als entscheidende Qualitätsunterschiede bringen.

Neben dem Einfluß der Metallpigmente sind weitere Kriterien für die Brillanz einer Goldfarbe entscheidend (siehe *Tabelle 2*). Wäßrige Bindemittel ermöglichen ein besseres Aufschwimmverhalten: die Pigmen-

*Tabelle 1*



*Mikroaufnahme einer Goldfarbe:  
Bronzierung (links),  
Acrylac Gold (Mitte),  
Offsetgold (rechts).*

1/2,AB/2 (Item 2 from file: 351)  
DIALOG(R)File 351:DERWENT WPI  
(c)1996 Derwent Info Ltd. All rts. reserv.

008028741 WPI Acc No: 89-293853/41

XRPX Acc No: N89-224145

Inking mechanism for offset printing machine - incorporates additional rollers to apply paste-like coating

Patent Assignee: (POLL ) VEB POLYGRAPH LEIPZIG

Author (Inventor): JENTZSCH A; GRAFE F

Number of Patents: 002

Patent Family:

| CC Number  | Kind | Date   | Week         |
|------------|------|--------|--------------|
| DE 3906648 | A    | 891005 | 8941 (Basic) |
| DD 282663  | A    | 900919 | 9108         |

Priority Data (CC No Date): DD 313982 (880325)

Applications (CC,No,Date): DE 3906648 (890302)

Abstract (Basic): DE 3906648

The offset printing machine for printing individual sheets has inking mechanisms which apply a low viscosity, water soluble coating to the material which is to be printed. The last inking mechanism (2) of the printing machine applies a coating of a paste-like oil containing substance.

The inking mechanism (2) consists of a printing cylinder (1), a forme cylinder (3), a transfer roller (4) and a profiled roller (5) which is partly immersed in the coating substance and is provided with a wiper blade (7). The coating substance is spread evenly over the transfer roller (4) by smoothing rollers (8).

USE - Offset printing machines. @(4pp Dwg.No.1/3)@

Derwent Class: P74;

Int Pat Class: B41F-005/00; B41F-007/04; B41F-009/00; B41F-023/08;  
B41F-031/06

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